

Anthomyiidae (Diptera) Collected in the Imperial Palace, Akasaka Imperial Gardens and Tokiwamatsu Imperial Villa, Tokyo, Japan

By

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諏訪正明¹⁾: 皇居, 赤坂御用地および常盤松御用邸で採集されたハナバエ類
(双翅目, ハナバエ科)

Introduction

Some anthomyiid flies, 13 species, were recorded from the gardens of the Imperial Palace, Tokyo (Suwa, 2000). After that I have had an opportunity for examining additional specimens from the Palace (115 ha in area) and some others from the Akasaka Imperial Gardens (51 ha), 1.5 km west of the Palace, and the Tokiwamatsu Imperial Villa (2 ha), 4 km southwest of the Palace. The specimens examined are classified into 23 species, made up of 11 spp. from the Palace, 20 spp. from the Akasaka Imperial Gardens, and 7 spp. from the Tokiwamatsu Imperial Villa. These species are enumerated below. All of the species previously recorded from the Palace by myself are also found among the present material.

Most of the species recognized are not beyond expectation. Some are, however, worthy of special mention. A male specimen of *Chirosia* is peculiar in having asymmetrical surstyli and is concluded to be referred to an undescribed species closely related to the North American *C. gleniensis* (Huckett, 1924) and also to the Tibetan *C. laticerca* Fan, 1984. A new species is, therefore, described on the basis of the specimen. *Pegomya dulcamarae* Wood, 1913, is recorded from Honshu for the first time. The female of *Botanophila kitayamae* (Suwa, 1974) is described for the first time.

All specimens examined were collected by S. Shinonaga, Tokyo Medical and Dental University, unless otherwise stated, and are now deposited in the National Science Museum, Tokyo.

Enumeration

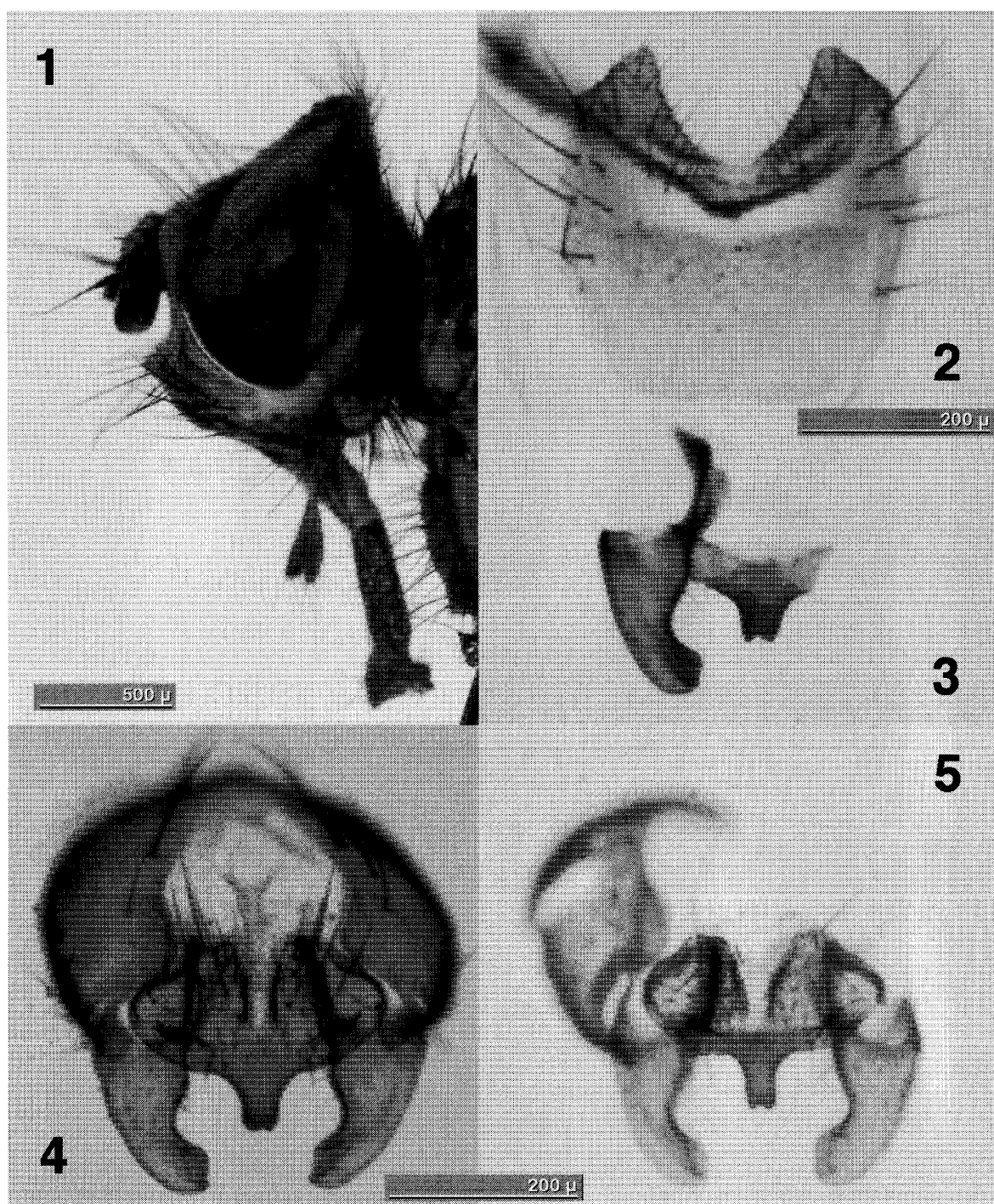
1. *Anthomyia illocata* Walker, 1856

Material examined. Imperial Palace, 1♀, 22. vii–18. viii. 1998, Banana Trap. Akasaka, 1♂, 1♀, 16. ix. 2003, MT (=Malaise Trap).

Distribution. Japan (Honshu; Shikoku; Kyushu; Hachijo-jima; Ogasawara Isls.; Nansei Isls.); Korea; China; Oriental region.

Remarks. This is a synanthropic fly, and not rare in urban or suburban environment.

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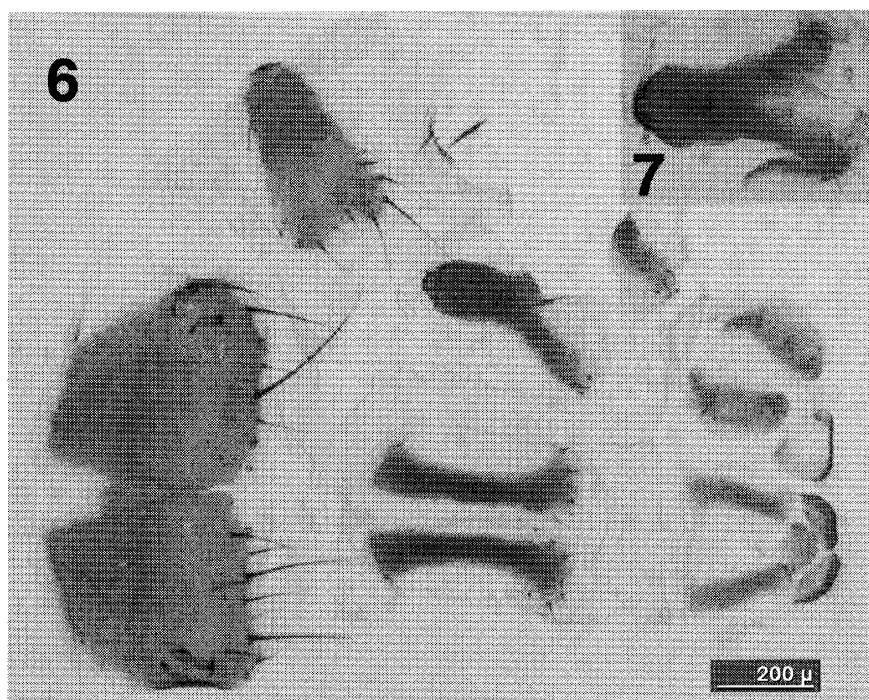


Figs. 1–5. *Botanophila kitayamae* (Suwa, 1974), ♂. 1, Head, lateral view; 2, 5th sternite; 3, hypopygium, dorsal view, showing left surstylus and apical projection of cercal plate; 4–5, hypopygium, dorsal view. Figs. 1–2, 4–5, Imperial Palace, Tokyo (1, 4, same specimen; 2, 5, another specimen); Fig. 3, Kyoto (paratype).

2. *Anthomyia plumiseta* Stein, 1918

Anthomyia plumiseta: Suwa, 2000: 463.

Material examined. Imperial Palace, 1♀, 12. v. 2005.



Figs. 6–7. *Botanophila kitayamae* (Suwa, 1974), ♀. 6, Ovipositor; 7, 7th sternite. Fig. 6, Akasaka Imperial Gardens, Tokyo; Fig. 7, Imperial Palace, Tokyo.

Distribution. Japan (Hokkaido; Honshu; Kyushu; Nansei Isls.); East Palaearctic and Oriental regions.

3. *Botanophila kitayamae* (Suwa, 1974) (Figs. 1–7)

Botanophila kitayamae: Nakamura, 2002: 177.

Material examined. Imperial Palace, 4♂, 4♀, 24. iii. 2003. Akasaka, 2♀, 4. iii. 2003, MT; 2♂, 3♀, 1. iv. 2003, MT; 1♂, 9♀, 15. iv. 2003, MT; 2♀, 28. iv. 2003, MT.

Distribution. Japan (Honshu).

This species was originally described from two male specimens collected at Kitayama, Kyoto, Honshu, and an additional record was recently given on the basis of a male specimen (determined as *B. kitayamae* by myself) collected in the Nasu Imperial Villa, Tochigi-ken, Honshu (Nakamura, 2002). On this occasion supplementary information based on the present material is given for the male, and the female is described for the first time.

♂. Wing-length 4.2–5 mm. Head in ground colour on interfrontalia, parafacials and genae mainly yellowish to almost wholly blackish (probably due to the degree of aging). Mesonotum thinly pollinose; in frontal angle of view with pollinosity rather well visible, median and paramedian dark vittae and lateral dark patches obscurely to rather distinctly discernible; in caudal angle of view, before suture with pollinosity rather well visible, median dark vitta rather well discernible, paramedian dark vittae and lateral dark patches obscurely discernible, and behind suture almost wholly darkened.

Mesonotum rather densely setulose laterally; 3–4 pairs of *pre-acr*, with 1–3 setulae between the rows; *pra* distinct, usually shorter than posterior *ntpl* (as long as the latter in left body-side of 1 specimen); notopleuron usually with no accessory setulae (1 setula discernible on left body-side in 1 specimen).

Sixth tergite usually setose (bare in 1 specimen), with setae variable in number from 1 to 11; cercal

plate with apical projection more or less variable in attenuation.

Mid tibia with 1 *ad*, 2 (rarely 1) *pd* and 2 (rarely 3) *pv*; t_3 with 1–4 (usually 2) *av*, 4–6 *ad*, 3–4 (usually 3) strong and occasionally 1–2 weaker *pd*, and 3–6 *pv*. Wings occasionally with a minute setula on R_1 near costa dorsally.

♀. Densely pale brownish grey pollinose. Frons as wide as or usually a little wider than one-third head width; 2–3 strong and 1–2 weaker *ori* mingled with a few or some minute setulae; 3 *ors*, occasionally 2 or 4 *ors* on one body-side. Hind femur on basal third or half with 2–4 *pv* shorter or at most as long as height of the femur; t_3 with 1 or a few *pv*, often hardly discernible. Ovipositor as in Figs. 6–7; 7th sternite membranous posteromedially and more or less Y-shaped.

Remarks. The apical projection of cercal plate in the male is distinctly narrower in the present specimens (Figs. 4–5) and also in the specimen from Tochigi than in those from Kyoto (Fig. 3). This may be due to local or individual variation. There have been only a few records of this species. It may reflect a paucity of chance to collect the species as it appears in early spring.

4. *Chirosia asymmetrica* sp. nov. (Figs. 8–17)

Type material. Akasaka Imperial Gardens, Tokyo, 1♂ (holotype), 15. iv. 2003, MT.

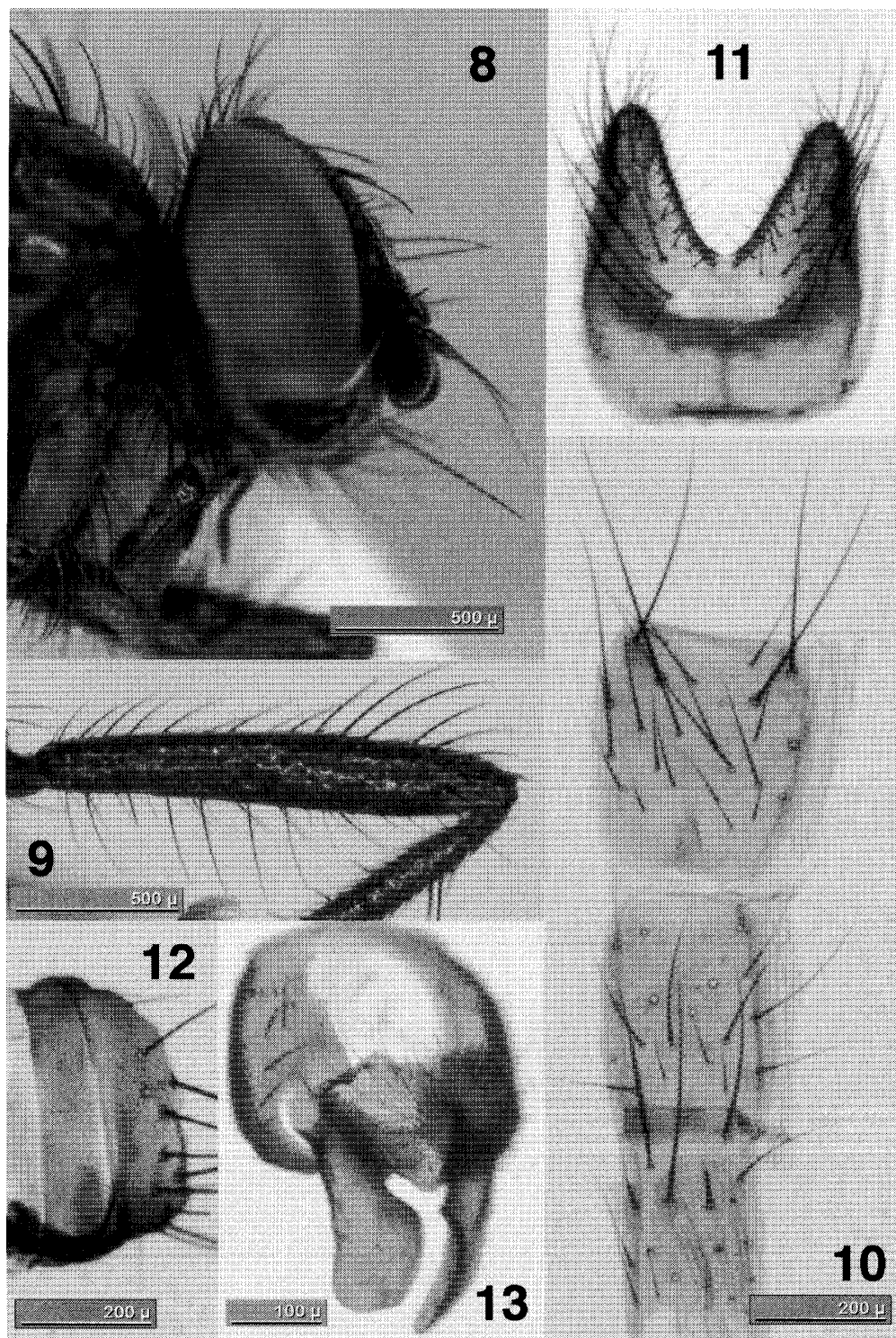
Distribution. Japan (Honshu).

♂. Wing-length 4 mm. Body including appendages blackish in ground colour and mainly whitish grey in pollinosity. Occiput tinged with brown in pollinosity especially on upper area; haustellar mentum rather thinly pollinose. Mesonotum shining in most angles of view though distinctly pollinose, slightly brownish in pollinosity; in frontal angle of view wholly pollinose, with blackish areas around *pra*; in caudal angle of view largely blackish, with pollinosity discernible between rows of *dc* and *ia* on postsutural area and along transverse suture. Abdomen rather thinly pollinose and shining; median vitta narrow; 5th tergite almost wholly blackish in caudal angle of view. Wings tinged with brown, darker basally; calyptres whitish, with a faint brownish tinge; halteres pale yellow, with brownish base.

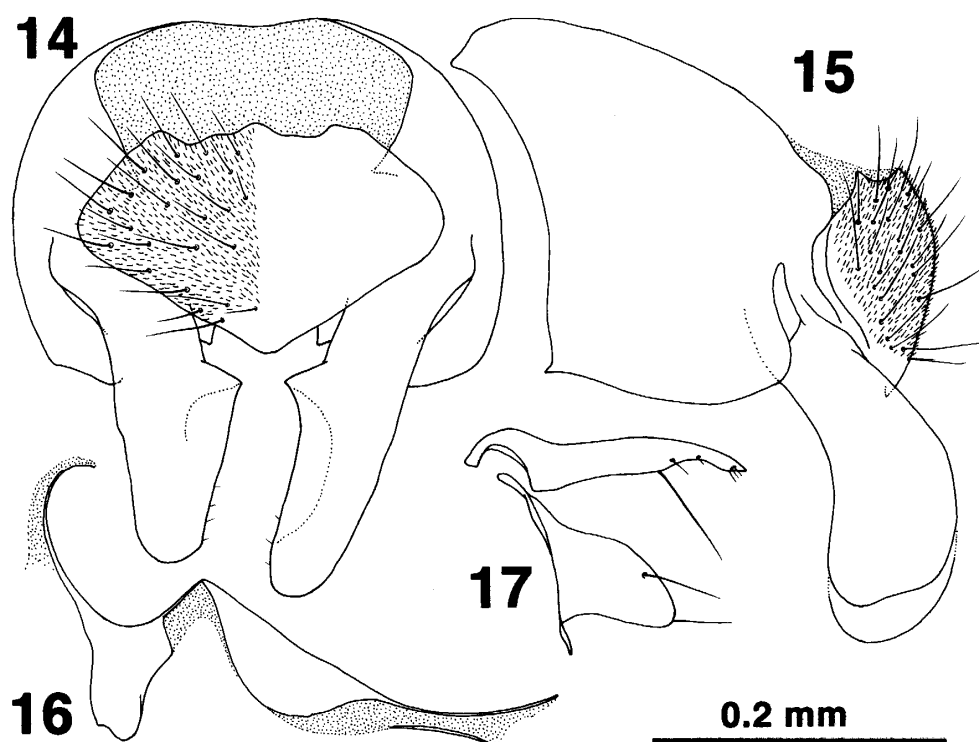
Frons slightly wider than anterior ocellus; interfrontalia linear caudad, with a pair of strong *if*; parafrontals probably with 3 or 4 strong and some weak or fine *ori* (damaged and some setae missing), and with 1 distinct proclinate *ors*; A_3 about 1.5 times as long as wide; arista minutely pubescent, with hairs shorter than basal diameter of arista; orbits at parafrontal angle two-thirds as wide as A_3 ; genae a little less than A_3 -width in height, with genal setae in single row; epistoma situated behind tip of parafrontal angle; proboscis not much enlarged (Fig. 8), with mentum in frontal view of dried condition narrower than height of fore femur though wider than A_3 ; occiput setulose on postocular disks.

Mesonotum with 3 pairs of *pre-acr* in close rows (to be exact, left posteriormost seta situated just behind transverse suture), no accessory setulae along and between the rows; posterior *ph* hardly developed, though distinguishable from adjacent ground setulae; *pra* very slightly shorter than posterior *ntpl*; mesopleuron with a distinct anterior *mpl*; 1 strong and 1 weak *pstg*, with no associated setulae; *stpl* 1 : 2; scutellum on dorsal surface almost bare, only with a setula near each basal seta and a setula near right discal seta, on each lateral margin with 2 setulae present, and on ventral side with no hairs discernible.

Abdomen depressed, about twice as long as wide; 2nd to 5th tergites with a medial row of 3–4 distinct or strong setae on each side dorsolaterally; 6th tergite (Fig. 12) bare, not fused with pregenital sclerite; 5th sternite rather uniformly setose on processes (Fig. 11); hypopygium (Figs. 13–15) with asymmetrical surstyli, left one shorter; cercal plate much wider than long, densely pilose, and rather sparsely armed with fine setae.



Figs. 8–13. *Chirosia asymmetrica* sp. nov., ♂. 8, Head, lateral view; 9, right hind femur, posterior view, showing well developed pv; 10, 2nd to 4th sternites; 11, 5th sternite; 12, 6th tergite (left) and pregenital sclerite; 13, hypopygium, dorsolateral view. Akasaka Imperial Gardens, Tokyo.



Figs. 14–17. *Chirosia asymmetrica* sp. nov., ♂. 14, Hypopygium, dorsal view; 15, hypopygium, lateral view; 16, basiphallus and distiphallus; 17, pregonite and postgonite. Akasaka Imperial Gardens, Tokyo.

Mid femur with no distinct *av*, on basal third or half with some (4 on left leg, 6 on right) *pv* longer than height of the femur, and near apex with 1 or 2 finer *pv*; f_3 with a row of 7 or 8 *av*, most of them longer than height of the femur and the longest one about 1.5 times as long as the height, on basal half or slightly more with some (5 on left, 7 on right) long *pv* (Fig. 9), the longest one about as long as the longest *av* though a little weaker than the latter, and near apex with a shorter *pv*; t_1 with 1 small *ad* near apical third and 1 strong *p* near middle; t_2 with 1 *pd* and 1 *p*, and with no *ad* or *pv* discernible; t_3 with 4 *av*, 5 *ad*, 3 *pd* and 2 *pv*, and with apical *pv* well developed, about as long as apical *pd*. Wings with costa haired ventrally; costal thorns rather distinct, much stronger than costal spinules and about as long as costal width; *dm-cu* nearly straight and hardly oblique; lower calyptra narrow.

♀. Unknown.

Remarks. This is a third species of *Chirosia* which has asymmetrical surstyli. The other two are the North American *C. gleniensis* (Huckett, 1924) and the Tibetan *C. laticerca* Fan, 1984. According to Griffiths (2004) *C. gleniensis* has the following features: proboscis much enlarged, f_3 with only 1–2 preapical *pv*, t_3 with short apical *pv*, and hypopygium with surstyli short and much expanded apically. The original description of *C. laticerca* reads as follows: proboscis thickened, occiput bare on postocular disks, *stpl* 2 : 2, f_3 with *pv* only near apex, hypopygium with left surstylus much shorter than right one. These may be significant enough to recognize the present form as a distinct species.

The genus *Chirosia* is, so far as known, associated with ferns as leaf miners, leaf rollers, stalk borers or gall formers in the larval stage. Griffiths (2004) gives a note on *C. gleniensis* as follows “A large sample of flies swept from the fronds of this fern [*Onoclea sensibilis* L. (Dryopteridaceae)] in Ottawa . . . consists entirely of the present species.” Also in the case of *C. asymmetrica*, ferns of

Onoclea or the like may be presumed as host plants of the larvae.

5. *Delia echinata* (Séguy, 1923)

Delia echinata: Suwa, 2000: 464.

Material examined. Imperial Palace, 1♂, 8. v. 2003. Akasaka, 4♂, 30. iv. 2002; 1♂, 18. iii. 2003; 1♂, 18. iii. 2003, MT. Tokiwamatsu, 1♂, 13. v. 2003, MT.

Distribution. Japan (Hokkaido; Honshu; Shikoku; Kyushu); Holarctic region; India.

6. *Delia platura* (Meigen, 1826)

Delia platura: Suwa, 2000: 464.

Material examined. Imperial Palace, 1♂, 2♀, 7. xii. 2000; 1♂, 15. i. 2001; 2♂, 2♀, 16. iv. 2001; 3♂, 1♀, 16. iv. 2001 (T. Nambu); 1♂, 1♀, 24. x. 2001; 7♀, 14. xi. 2001; 8♂, 5♀, 16. v. 2002; 1♂, 16. iv. 2003; 1♀, 8. v. 2003; 1♂, 2. vi. 2003; 2♀, 13. xi. 2003; 12♂, 8♀, 16. xii. 2003; 2♂, 2♀, 19. i. 2004; 1♂, 1♀, 12. ii. 2004; 4♂, 10. iii. 2004; 1♂, 17. v. 2004; 1♂, 18. ix. 2004; 1♀, 8. xii. 2004; 5♂, 1♀, 12. v. 2005. Akasaka, 11♂, 7♀, 30. iv. 2002; 18♂, 13♀, 13. v. 2002; 3♂, 14♀, 28. x. 2002, MT; 1♂, 10♀, 11. xi. 2002, MT; 6♀, 25. xi. 2002, MT; 6♂, 8♀, 6. xii. 2002, MT; 1♂, 3♀, 24. xii. 2002, MT; 1♂, 6. i. 2003, MT; 1♂, 21. i. 2003, MT; 1♂, 1♀, 4. iii. 2003, MT; 4♂, 5♀, 1. iv. 2003, MT; 5♂, 8♀, 15. iv. 2003, MT; 2♂, 2♀, 6. v. 2003; 1♀, 30. vi. 2003; 1♀, 8. ix. 2003; 1♀, 30. ix. 2003, MT; 1♂, 13. xi. 2003; 3♂, 5♀, 18. xi. 2003; 1♂, 2♀, 13. v. 2004. Tokiwamatsu, 1♂, 15. iv. 2002, MT; 2♀, 11. x. 2002, MT; 2♂, 1♀, 28. x. 2002, MT; 1♀, 11. xi. 2002; 2♀, 13. v. 2003.

Distribution. Japan (Hokkaido; Honshu; Shikoku; Kyushu; Nansei Isls.); almost cosmopolitan.

7. *Delia seticauda* Suwa, 1984

Material examined. Akasaka, 2♂, 28. iv. 2003, MT.

Distribution. Japan (Honshu; Kyushu; Nansei Isls.)

Remarks. In Honshu this species has been known only from Ishikawa-ken.

8. *Delia takizawai* Suwa, 1974

Material examined. Akasaka, 1♂, 15. iv. 2003, MT.

Distribution. Japan (Hokkaido; Honshu; Kyushu); Korea; NE China; Siberia; Taiwan.

Remarks. This is a common species in Japan.

9. *Emmesomyia megastigmata* Ma, Mou et Fan, 1982

Material examined. Tokiwamatsu, 1♀, 6. xii. 2002, MT.

Distribution. Japan (Honshu; Kyushu); China.

Remarks. So far as known the larvae of *Emmesomyia* are coprophagous.

10. *Eustalomyia vittipes* (Zetterstedt, 1845)

Material examined. Akasaka, 1♀, 2. ix. 2003, MT; 1♀, 16. ix. 2003, MT; 1♀, 30. ix. 2003, MT; 2♀, 14. x. 2003, MT.

Distribution. Japan (Honshu; Kyushu); China; Europe; North America.

Remarks. *Eustalomyia vittipes* is known to be associated with wasps (mostly crabronids), the fly larvae feeding on wasp larvae and on stored prey (Griffiths, 1996).

11. *Lasiomma craspedodontum* (Hsue, 1980)

"*Lasiomma seminitidum*": Suwa, 2000: 464.

Lasiomma craspedodontum: Suwa, 2005: 93.

Material examined. Imperial Palace, 6♂, 15. iii. 2001; 1♂, 16. iv. 2001; 2♂, 14. ii. 2002; 2♂, 24. iii. 2003; 1♂, 16. iv. 2003; 1♂, 16. xii. 2003; 1♂, 12. ii. 2004. Akasaka, 1♂, 4. iii. 2003, MT; 2♂, 18. iii. 2003; 1♂, 1. iv. 2003, MT; 4♂, 15. iv. 2003, MT. Tokiwamatsu, 1♂, 18. ii. 2003, MT; 1♂, 4. iii. 2003, MT; 3♂, 1. iv. 2003, MT; 2♂, 15. iv. 2003, MT; 2♂, 22. iv. 2003, MT.

- Distribution. Japan (Hokkaido; Honshu; Kyushu); Korea; China; Europe; North America.
12. *Leucophora obtusa* (Zetterstedt, 1838)
Leucophora obtusa: Suwa, 2000: 464.
 Material examined. Imperial Palace, 4♀, 16. iv. 2001 (T. Nambu); 4♂, 24. iii. 2003; 1♂, 6♀, 16. iv. 2003. Akasaka, 3♀, 30. iv. 2002; 3♂, 1. iv. 2003, MT; 7♀, 15. iv. 2003, MT; 2♂, 6♀, 28. iv. 2003, MT; 7♀, 6. v. 2003; 1♀, 10. vi. 2003, MT.
 Distribution. Japan (Honshu); Europe; North America.
13. *Pegomya bicolor* (Wiedemann, 1817)
Pegomya bicolor: Suwa, 2000: 466.
 Material examined. Imperial Palace, 1♂, 2♀, 24. iii. 2003; 2♂, 10. iii. 2004; 1♂, 12. v. 2005. Akasaka, 10♀, 28. x. 2002, MT; 1♂, 4. iii. 2003, MT; 5♂, 2♀, 1. iv. 2003, MT; 9♂, 6♀, 15. iv. 2003, MT; 2♂, 12♀, 28. iv. 2003, MT; 1♂, 1♀, 10. vi. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu; Shikoku; Kyushu); Holarctic region.
14. *Pegomya chinensis* Hennig, 1973
Pegomya chinensis: Suwa, 2000: 466.
 Material examined. Imperial Palace, 1♀, 16. iv. 2001 (T. Nambu). Akasaka, 1♂, 4. iii. 2003, MT; 2♂, 1. iv. 2003, MT; 1♀, 15. iv. 2003, MT; 1♀, 28. iv. 2003, MT.
 Distribution. Japan (Honshu; Shikoku; Kyushu); China.
15. *Pegomya dulcamarae* Wood, 1913
 Material examined. Tokiwamatsu, 1♂, 1♀, 13. v. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu); Europe.
 Remarks. This is the first record of *Pegomya dulcamarae* from Honshu. In Hokkaido this species has been reared from *Solanum tuberosum*, *S. nigrum* and *S. megacarpum* as a leaf miner in the larval stage.
16. *Pegomya flavifrons* (Walker, 1849)
 Material examined. Akasaka, 2♀, 4. iii. 2003, MT; 3♂, 4♀, 15. iv. 2003, MT; 1♂, 3♀, 28. iv. 2003, MT; 1♀, 16. ix. 2003, MT; 1♀, 30. ix. 2003, MT. Tokiwamatsu, 1♀, 15. iv. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu; Kyushu); Holarctic region.
 Remarks. This is a leaf miner in the larval stage on plants of Caryophyllaceae.
17. *Pegomya holostae* (Hering, 1924)
Pegomya holostae: Suwa, 2000: 466.
 Material examined. Akasaka, 1♂, 2♀, 15. iv. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu; Kyushu; Nansei Isls.); China; Europe; North America.
18. *Pegomya japonica* Suwa, 1974
Pegomya japonica: Suwa, 2000: 466.
 Material examined. Imperial Palace, 1♂, 18. iv. 2000 (T. Nambu). Akasaka, 2♂, 15. iv. 2003, MT; 1♂, 3♀, 28. iv. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu; Kyushu); China.
19. *Pegomya orientis* Suwa, 1974
Pegomya orientis: Suwa, 2000: 466.
 Material examined. Akasaka, 1♂, 1. iv. 2003, MT; 4♂, 15. iv. 2003, MT; 8♂, 2♀, 28. iv. 2003, MT; 2♂, 10. vi. 2003, MT; 1♀, 13. v. 2004.
 Distribution. Japan (Hokkaido; Honshu; Shikoku; Kyushu; Nansei Isls.); China.

20. *Pegomya quadrivittata* Karl, 1935
 Material examined. Akasaka, 1♂, 15. iv. 2003, MT; 1♀, 1. vii. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu; Shikoku; Kyushu; Nansei Isls.); East and South Asia.
 Remarks. In the larval stage this is known as a leaf-miner of some plants of *Polygonum*.
21. *Pegomya solennis* (Meigen, 1826)
Pegomya solennis: Suwa, 2000: 466.
 Material examined. Akasaka, 6♂, 4♀, 15. iv. 2003, MT; 1♂, 7♀, 28. iv. 2003, MT; 1♀, 10. vi. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu; Kyushu); Europe; North America.
22. *Pegomya vera* Suwa, 1974
Pegomya vera: Suwa, 2000: 467.
 Material examined. Imperial Palace, 1♂, 15. iii. 2001; 1♀, 24. iii. 2003. Akasaka, 1♀, 18. iii. 2003; 2♀, 1. iv. 2003, MT; 1♀, 28. iv. 2003, MT.
 Distribution. Japan (Hokkaido; Honshu; Shikoku; Kyushu).
23. *Pegoplata juvenilis* (Stein, 1898)
Pegoplata juvenilis: Suwa, 2000: 467.
 Material examined. Akasaka, 1♂, 17. vi. 2003, MT; 1♀, 30. ix. 2003, MT. Tokiwamatsu, 1♂, 28. x. 2002, MT.
 Distribution. Japan (Hokkaido; Honshu; Shikoku; Kyushu); Holarctic region.

Acknowledgements

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要 約

皇居、赤坂御用地および常盤松御用邸で採集されたハナバエ科の標本を検し、それぞれ 11 種、20 種、7 種を認め、合計 23 種を報告した。皇居からはすでに 13 種のハナバエが記録されているが、これらはすべて今回も上記 3 ヶ所のいずれかから確認された。これら 23 種の多くは本州の平野部から低山帯に普通の種であるが、いくつかの特筆すべき種の存在も明らかとなった。ジャガイモモグリハナバエ *Pegomya dulcamarae* はこれまで日本では北海道のみから知られていた。*Botanophila kitayamae* は模式標本産地の京都北山以外には栃木県那須御用邸の記録があるのみで、雌についても未発見であった。今回は雌雄を確認することができ、雌についてはじめて記載した。雄 1 個体に基づいて新種 *Chirosia asymmetrica* を記載した。本種は左右非対称の生殖器節を有することによって北米産 *C. gleniensis* およびチベット産 *C. laticerca* に近縁と考えられるが、いくつかの形態的差異によって後 2 者とは識別しうることを示した。

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